

REMARKS

This application was originally filed on 31 December 2001 with thirty-six claims, seven of which were written in independent form. No claims have been allowed. Claims 3, 16-18, 20, and 21 were amended, and Claim 4 canceled by amendment filed on 20 February 2004. Claims 1, 2, and 16 have been amended herein. The amendments to the claims are intended to clarify and broaden the scope of the claims.

Claim 1 was rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 4,954,480 to Imanaka et al. ("Imanaka") in view of U.S. Patent No. 6,326,244 B1 to Brooks et al. ("Brooks"). The applicant respectfully disagrees and submits the Examiner has failed to present a prima facie case of obviousness as required.

"To support the conclusion that the claimed combination is directed to obvious subject matter, either the references must expressly or impliedly suggest the claimed combination or the examiner must present a convincing line of reasoning as to why the artisan would have found the claimed invention to have been obvious in light of the teachings of the references." Ex parte Clapp, 227 U.S.P.Q. 972, 973 (Bd. Pat. App. & Inter. 1985).

"All words in a claim must be considered in judging the patentability of that claim against the prior art." In re Wilson, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970). "To establish prima facie obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art." MPEP § 2143.03 (citing In re Royka, 490 F.2d 981, 180 USPQ 580 (CCPA 1974)).

The Examiner has the duty to present a prima facie obviousness rejection. Under Graham, this requires determining the differences between the prior art and the claims at issue. The Examiner stated, Imanaka et al. teaches a method of forming a package substrate . . . except that it does not show . . . a cavity having a floor defining a reference plane." "Brooks et al. shows that it is known to provide a cavity formed in the substrate having a floor defining a reference plane, wherein said layers are shaped to expose limited regions of said reference plane outside said cavity for permitting the use of a flexible, tape-type base laminate in the package (col. 4, lines 23-30)."

Brooks, in lines 23-38 of column 4, states, "In one embodiment, the reference place

element is also formed as a frame of like size and shape to the adhesive frame, and placed thereover in alignment therewith, providing a deepened cavity. It should be noted that the use of a relatively thick, and thus rigid, reference plane element permits the use of a flexible, tape-type base laminate in the package, and also provides additional mass to facilitate heat transfer from the semiconductor die. After the semiconductor die is back-bonded to the die-attach location on the base laminate, connections are formed between the traces and the bond pads of the die, after which the die, inner trace ends and connections may be encapsulated with a so-called "glob top" of dielectric material, providing physical and environment protection for the encapsulated elements. The reference plane element and underlying adhesive provide a four-sided dam to prevent unwanted lateral encapsulant spread."

Thus, contrary to the Examiner's assertion, Brooks does not appear to show, teach, or suggest "sheets shaped to provide a substrate having a cavity, said cavity defining a reference plane, wherein said layers are shaped to expose limited regions of said reference plane outside said cavity" as recited by Claim 1. The Examiner therefore has not met the burden of presenting a prima facie case of obviousness, and the rejection under 35 U.S.C. § 103(a) is defective and should be withdrawn.

Claim 16 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Imanaka in view of Brooks. The applicant respectfully disagrees and submits, for the reasons argued above with respect to Claim 1, the Examiner has failed to present a prima facie case of obviousness, and the rejection under 35 U.S.C. § 103(a) is defective and should be withdrawn.

Claims 2-7 and 17-21 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Imanaka in view of Brooks. Claims 2-7 and 17-21 depend from Claims 1 and 16 and should be deemed allowable for that reason and on their own merits. For the reasons argued above with respect to Claims 1 and 16, the Examiner has failed to present a prima facie case of obviousness of the independent claims, much less of the combination of the independent and the additional limitations of the dependent claims.

In view of the amendments and the remarks presented herewith, it is believed that the claims currently in the application accord with the requirements of 35 U.S.C. § 112 and are allowable over the prior art of record. Therefore, it is urged that the present claims are in

condition for allowance. Reconsideration of the present application is respectfully requested.

Respectfully submitted,



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